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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Rec'd PCT/PTO 30 NOV 2004

Applicant's or agent's file reference DE920020020		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/03529	International filing date (day/month/year) 04.04.2003	Priority date (day/month/year) 31.05.2002	
International Patent Classification (IPC) or both national classification and IPC G06F12/00			
Applicant INTERNATIONAL BUSINESS MACHINES CORPORATION			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand 18.11.2003		Date of completion of this report 03.11.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Warry, L Telephone No. +31 70 340-3199 	

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/03529**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-17 as originally filed

Claims, Numbers

1-21 as originally filed

Drawings, Sheets

1/6-6/6 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	5-13, 15, 17, 20
	No: Claims	1-4, 14, 16, 18, 19, 21
Inventive step (IS)	Yes: Claims	
	No: Claims	1-21
Industrial applicability (IA)	Yes: Claims	1-21
	No: Claims	

2. Citations and explanations

see separate sheet

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The examination is being carried out on the **following application documents:**

Text for the Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LT LU LV MC MK NL
PL PT RO SE SI SK TR

Description, pages:

1-17 as originally filed

Claims, No.:

1-21 as originally filed

Drawings, sheets:

1/6-6/6 as originally filed

The following documents (D1, D2 and D3) are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

- D1: BUTRICO M ET AL: 'Enterprise data access from mobile computers: an end-to-end story' RESEARCH ISSUES IN DATA ENGINEERING, 2000. RIDE 2000. PROCEEDINGS. TENTH INTERNATIONAL WORKSHOP ON SAN DIEGO, CA, USA 28-29 FEB. 2000, LOS ALAMITOS, CA, USA, IEEE COMPUT. SOC, US, 28 February 2000 (2000-02-28), pages 9-16, XP010377083 ISBN: 0-7695-0531-7
- D2: US-B1-6 341 316 (KLOBA DAVID D ET AL) 22 January 2002 (2002-01-22)
- D3: WO 01/90933 A (HODGSON KEVIN ; OPENWAVE SYSTEMS INC (US)) 29 November 2001 (2001-11-29)

1.0 The present application does not meet the requirements of the PCT, because the subject-matter of claims 1 - 4, 14, 16, 18, 19 and 21 are not new in the sense of Article 33(2) EPC.

1.1 The document D1 (Page 9, Right Column, Line 22 - Page 10, Left Column, Line 21)

discloses the same problem as that defined in the description (Page 2, Second Paragraph), which is how to provide an interface which supports diverse data stores without the overhead of extra implementation code for each different data source.

D1 also discloses the following features of claim 1 (the references in parentheses applying to this document):

- System for exchange of data between different clients by using a central synchronization server; having a connection to said clients and a connection to a back end data store (Page 11, Left Column, Line 46 - Right Column, Line 1, "central server". Note: This passage states explicitly that direct client-to-client synchronization is not supported and indicates that synchronization is performed via a central server. Since this central server is used for the purpose of synchronization, it can only be considered as a central synchronization server. It is without doubt that such a synchronization server is connected to a back end data store. See, for example, Page 11, Left Column, Lines 14 - 16);
- Said clients having a program for creation of data to be synchronized (Page 13, Right Column, Line 51 - Page 14, Left Column, Line 4, "synchronizers");
- A Sync Engine for performing synchronization with said central synchronization server (Page 14, Left Column, Lines 7 - 16, "map MDSP data to/from back-end databases". Note: It is implied that this mapping is functionally equivalent to that of the function of the Sync Engine, as defined in the Description, Page 17, Last Two Lines);
- A single Back End neutral interface (CAF - interface) with said Sync Engine (Page 11, Left Column, Lines 10 - 22, "common data interchange format". Note: A common data interchange format implicitly requires an adapter interface for communication to the Back End. Furthermore, since there is only one interchange format specified in D1, it is implied that only one such single adapter interface is required in order for communication to be achieved between a server and its connected back end(s));
- At least one component (content adapter) comprising a Back End dependent part having an interface with said single Back End neutral interface and said assigned Back End data store (Page 14, Left Column, Lines 8 - 18; Page 11, Left Column, Lines 10 - 22. Note: The adapter disclosed, which resides on the server, interfaces the Back end database, the disclosure therefore implies the presence of both a Back End dependent

part and a Back End independent part interfacing the Back End data store);

The corresponding features of claims 16 and 21 are implied in the corresponding operation and implementation of the method corresponding to the system claimed in claim 1. As a consequence, the same Article 54 objection applies.

1.2 The additional features of claim 2 are also disclosed in D1 (Page 11, Left Column, Lines 10 - 22, "two adapters ... one adapter ... translates ... into MDSP data format ... The other adapter ... translates ... into a particular back-end data format". Note: The first cited adapter implies the back-end independent part and the second cited adapter implies the back-end dependent part).

1.3 The additional feature of claim 3 is also disclosed in D1 (Page 11, Left Column, Lines 10 - 22, "required adapters ... n back-end data source types". Note: The citation implies the assignment of an adapter (or component) for each data store type).

1.4 The additional feature of claims 4, 14, 18 and 19 are also disclosed in D1:

Claims 4 and 14: (Page 11, Right Column, Lines 20 - 27, "MDSP is a client-server data exchange and synchronization protocol");

Claim 18: (Page 14, Right Column, Lines 28 - 44, "adapter queues can act as buffers for outstanding client requests. Note: the buffers for outstanding client requests imply the creation of client request objects. Furthermore, the buffers are adapter queues. Thus, they serve the Back End specific parts).

Claim 19: (Page 11, Right Column, Lines 34 - 36, "meta information").

As a consequence, the subject-matter of claims 1 - 4, 14, 16, 18, 19 and 21 is not new (Article 54(1) and (2) EPC).

2.0 Dependent claims 5 - 13, 15, 17 and 20 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the EPC with respect to inventive step (Article 33(3) PCT) as their features purport to nothing more than common knowledge that would be recognized by the person skilled in the art.

2.1 See document D2 (Column 20, Lines 35 - 54, "cache") for an example of the caching mechanism of claim 5. In this citation, the caching is performed on down transmission (i.e. to the client). However, since D2 lies in the field of data synchronization between client and server, the skilled person would require no inventive activity in choosing this document and applying the same disclosed technique in order to cache on up transmission (i.e. to the Back end data store) and therefore solve the bandwidth problem in the same way as claimed in claim 5.

2.2 According to the description (Page 11, Second Paragraph) a Back End Monitor as claimed in claim 6 provides update data from each individual Back End data source to a cache and according to the description (Page 10, Last Paragraph) a Cache Monitor as claimed in claim 7 replicates new data from the cache to the back end data store.

These features would be a natural consequence of implementing the caching mechanism of claim 5 and would thus not be inventive.

2.3 According to the description (Page 11, Last Paragraph) a Back End Manager as claimed in claim 8 provides access to back end administrative functionality such as: validation of user authentication, retrieval of access permissions for authenticated users, retrieval of back end specific time stamp and adding/removing of URI and translation of content storage specific format into common Sync Objects. These, however, are trivial features which the person skilled in the art would implement in order to solve the problem of providing better data transfer control over the synchronization of data between multiple clients and multiple data sources.

2.4 The features of claims 10 - 13 and 17 are further mere details of implementation which would normally be required in order to solve the problem of how to store cached objects and how to transmit objects between the Back end data store and the cache. They are therefore not inventive as they do not produce any surprising event.

2.5 The feature of the synchronization protocol being SyncML, in claim 15, is an obvious alternative to the disclosed MDSP protocol of document D1 (Page 11, Right Column, Lines 20 - 36), which the person skilled in the art would choose in order to solve the problem of synchronization with an alternative message structure.

Furthermore, the SyncML protocol was well known in the field of data synchronization

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as a synchronization message protocol before the priority date of the application. See, for example D3, Page 8, Section 4.5.

It is also well known in the field of data synchronization that updates presented over a SyncML protocol are XML documents.

2.6 The subject-matter of claims 5 - 13, 15, 17 and 20 does therefore not involve an inventive step.